ADEQ Arizona Department of Environmental Quality

PUBLIC NOTICE

PROPOSED LEAKING UST (LUST) CASE CLOSURE

The Arizona Department of Environmental Quality (ADEQ) is considering closure of the following leaking underground storage tank (LUST) cases:

LUST Case File #0305.02
Facility ID # 0-000645
Yuma County

Giant #6641 (Former ARCO Facility No. 9929)
10800 North Frontage Road
Yuma, Arizona 85365

This former ARCO station is currently an active 76-branded station owned and operated by Barnicle Enterprises, Inc., located at the intersection of Frontage Road and Fortuna Road in Yuma. The site operates as a truck stop, convenience store and fueling station with five USTs which were installed in 1983 when the former USTs were removed. In January 1980, a 150,000 gallon diesel fuel release was suspected. Site investigations began in 1980 to define the extent of the reported diesel fuel leak. Soil contamination was present to a depth of 135 feet below ground surface (bgs) and it also impacted groundwater. Several monitoring wells and soil borings have been installed as part of site investigations. In 1987, the installation of a 12-inch diameter recovery well with a dual pump system to remove groundwater and light non-aqueous phase liquid hydrocarbons (LPH) was completed. The system included three monitoring wells, the recovery well and an air stripper. The treated groundwater was to be discharged into monitoring well AY-4. As the system was installed, AY-4 was not able to be used for treated groundwater discharge. An infiltration gallery in the landscaped area near AY-4 was used instead. The pump and treat system was terminated in 1992. In 1997, the *Corrective Action Plan* was approved and a bio-vent system and pneumatic LPH skimming system was installed. The bio-venting system operated until 2002 when the motor failed. It was discovered that the bio-vent well screens were fouled and no longer functioning properly. In November 2004, the LPH thickness in off-site well B12 increased. Fingerprint analysis was performed in 2010 and the LPH plume (severely weathered middle distillate fuel like diesel fuel or fuel oil) was consistent with the documented LUST release. In 2013, ARCO transferred responsible party status to Tesoro Companies (Tesoro). Antea Group, consultant for Tesoro, rescinded the CAP in 2014 to collect additional data and perform pilot testing for different LPH removal, and to further delineate the dissolved phase hydrocarbon and LPH plume. Additional groundwater monitoring wells were installed to evaluate the northern and western extent of the dissolved phase plume. The only contamination reported was methyl tert butyl ether (MTBE) at extremely low concentrations. MTBE is not associated with a diesel fuel release. Tesoro requested LUST case closure which ADEQ denied in a letter dated October 23, 2017. The only remaining Volatile Organic Compound (VOC) at concentrations that exceed the Arizona Aquifer Water Quality Standards (AWQS) is benzene.

Data provided by Antea Group in the *Corrective Action Completion Report Addendum* received August 21, 2018 and the original *Corrective Action Completion Report* received July 27, 2017, and all other available site information has been used by ADEQ to determine whether remaining levels of contaminants at the site are adequately protective of human health and the environment. A site specific risk assessment and detailed file/information search were also completed.

Based upon the results of remedial activities and site specific information, the above-referenced LUST site is eligible for alternative LUST closure under Arizona Revised Statutes (A.R.S.) §49-1005(E). Arizona Administrative Code (A.A.C.) R18-12-263.04 allows case closure of a LUST site with

groundwater contamination above the Arizona AWQS or Tier 1 Corrective Action Standards. ADEQ has considered the results of a site specific assessment and the rule specific criteria below:

1. *Threatened or impacted drinking water wells*: The site is located within the Yuma Basin, a section of the Lower Colorado River Planning Area. The Yuma Basin aquifer is divided into three zones. The middle zone (Coarse-Gravel zone or CG) is one of the water production zones. The depth to groundwater can range from 100 feet bgs near the Colorado and Gila River Valleys to approximately 180 feet bgs beneath the Yuma Mesa. The saturated material beneath the site is likely within the CG. However, due to mounding of groundwater from agricultural irrigation beneath the Yuma Mesa, water may also be present within the upper Fine-Grained Zone (UFG). Minimal water is available in the UFG outside of irrigated areas within the basin. The site is supplied municipal water from the City of Yuma. According to the City of Yuma's webpage, their primary water supply is the Colorado River delivered through the facilities of the Yuma County Water Users Association and the Gila Gravity Canal System. According to the ADWR webpage, 1st Priority Rights to Colorado River water (Satisfaction of Present Perfected Rights as defined in the Arizona v. California decree) includes the Yuma County Water Users' Association and the City of Yuma. With two water treatment locations, the Main Street Water Treatment Plant can produce up to 40 million gallons daily (mgd), and the Agua Viva Water Treatment Facility can produce up to 20 mgd. The Main Street Water Treatment Plant has been producing drinking water for the Yuma area since 1892. According to the ADWR *List of Municipal Water Providers Designated as Having an Assured or Adequate Water Supply* dated January 4, 2018, City of Yuma is DWR 40-900019.00. According to the Arizona Department of Water Resources (ADWR) records, there are 47 registered wells within ½ mile of the site. Of these registered wells, there is one exempt (#55-513046) and one non-exempt (#55-517313) wells. Both of these wells are registered to ARCO as a domestic supply well and an industrial well. Neither well have imaged records available for review. There are 42 monitoring wells and 3 registered as other. Any new or replacement well located at or near this site would need to meet the criteria of A.A.C. R12-18-1302 (B) (3).

2. *Other exposure pathways*: Historic soil data indicates benzene contamination present over applicable regulatory standards between 50 and 90 feet bgs in boring B3 in 1995. No other VOCs, polyaromatic hydrocarbons (PAHs), or semi-volatile organic compounds (SVOCs) were reported over applicable regulatory standards. Exposure by direct dermal contact or ingestion of contaminated soils is not a complete exposure pathway given the depth of the soil contamination. Soil samples were also collected to a depth of 15 feet bgs in March 2016 from the soil vapor probe locations. No VOCs, (PAHs), tetraethyl lead (TEL) was detected at concentrations over applicable regulatory standards. Most of the analytical data was reported as less than the laboratory reporting limit. Most of the data was reported as less than the applicable laboratory reporting limit. In 2016, Antea Group conducted a soil vapor survey to assess the vapor inhalation risk pathway. Soil vapor samples were collected at a depth of 5 feet and 10 feet bgs and were analyzed by EPA Method TO-15, for VOCs and ASTM Method D1946 for fixed gases. Field and laboratory quality assurance/quality control (QA/QC) was acceptable. Antea Group used the Johnson & Ettinger model with site-specific data and model default parameters to evaluate potential human health risk under a residential land-use scenario. A cumulative cancer risk (ELCR) and a non-cancer hazard index (HI) value was calculated. The ELCR and the HI was 1.3E-07 and 5.99E-03, respectively for the 5 foot bgs vapor data. The ELCR and the HI was 6.49E-07 and 1.44E-02, respectively for the 10 foot bgs vapor data. It is noted that Antea Group modeled both petroleum and non-petroleum CoCs together instead of separately. All of these values represent acceptable risk since they are below the target thresholds of E-06 and 1.0, respectively. Incidental dermal contact with the groundwater is considered *de minimis* risk. In a ¼ mile land use/receptor survey, there are no schools, day care centers, hospitals or other sensitive populations.

3. *Groundwater plume stability*: Benzene is the only dissolved-phase contaminant of concern (CoC) reported exceeding the AWQS. The benzene plume has been monitored at the site for 30 years without significant migration. The benzene plume is confined to on-site in the vicinity of the former USTs. VOC contamination beneath the site appear to have existed around the former USTs and has decreased in extent and concentration between 1992 and 2018. Based on groundwater data collected between 1987 through the first quarter of 2017 indicates that the estimated site-wide reduction in concentration of benzene is 76.31%. Antea Group collected an additional four quarters of groundwater data. Groundwater elevation data was collected in late February 2018 and the depth to groundwater ranged from 138 to 140 feet bgs in the four wells that show benzene contamination present over AWQS. The groundwater flow and gradient at the site is variable and generally flat according to the rose diagram. Antea Group conducted a trend analysis for benzene concentrations at the site using the GSI Mann-Kendall Toolkit for Constituent Trend Analysis. The summary of the benzene analysis indicate a statistically significant decreasing/stable trend over the previous 10 years of sampling data from monitoring wells AY-4 and B-13. An additional Linear Regression and Theil-Sen Analyses for monitoring wells B-1, B-13 and AY-4 indicate the benzene concentrations have a negative slope and also appear to confirm that the benzene plume at the site is stable. Groundwater plume stability is also demonstrated by the remaining VOC contamination present over an AWQS is limited to monitoring wells, B1, B13, AY-0 and AY-4. Based on groundwater data collected in March 2018, the highest benzene concentration was in B1 at 472 µg/L. The highest historic benzene concentration in B1 was 2,400 µg/L in November 2009. The VOC concentrations in groundwater have declined by several magnitudes in most wells. Antea Group also evaluated plume stability using BIOSCREEN. Based on the calibrated models and "1st Order Decay" conditions, the maximum extent of the benzene plume at the AWQS is no greater than 235 feet west and 108 feet south of the former USTs.

4. *Characterization of the groundwater plume:* Groundwater samples have been collected at the site since 1987. MW1-MW4 were abandoned in 2008. A total of eleven monitoring wells have been installed of which one (MW11) is located off site. Dissolved-phase petroleum hydrocarbons have been characterized in soil and groundwater as of December 1998. Based on groundwater data collected in May 2018, the highest benzene concentration is in B1 at 472 µg/L. The highest benzene concentration in B1 was 2,400 µg/L in November 2009. Other VOC concentrations have been mostly below laboratory detection limits or slightly above, since at least 2013 with the exception of wells B1, B13, AY-0 and AY-04.

5. *Natural Attenuation*: Natural attenuation processes include diffusion, dispersion, sorption, volatilization, and biodegradation. A decreasing trend in chemical concentrations in groundwater has been established, which supports natural attenuation is occurring. Hydrologic and geochemical data can be used to indirectly demonstrate the type(s) of natural attenuation processes. In 1995 an evaluation of in-situ biodegradation at the site was performed. Indigenous microbial densities were conducive to the biodegradation of petroleum hydrocarbons and an average enhanced degradation rate of approximately one mg/kg/day was calculated by Delta Consultants. Field based monitored natural attenuation (MNA) parameters were collected during the first quarter 2017 groundwater monitoring event. Geochemical parameters to support natural attenuation were not collected. However, the field parameters collected do support biodegradation. The temperature in groundwater beneath the site was measured from 72.45º to 82.04º which is within the optimal range for microbial activity. Dissolved oxygen (DO) measurements indicate that aerobic conditions are present and suitable for microbial activity. Benzene tends to be degraded more quickly under aerobic conditions. Oxidation Reduction Potential (Redox) measurements indicate a reducing area within the benzene plume and more oxidative conditions outside the plume foot print. Based on the review of DO and Redox for the Site, the Site appears to have both aerobic and

anaerobic degradation occurring in the subsurface as presented in their submittal. Based on the calibrated models and "1st Order Decay" conditions in BIOSCREEN, the maximum extent of the benzene plume at the AWQS is no greater than 235 feet west and 108 feet south of the former USTs. Antea Group used a solute half-life of approximately 2 years for benzene was used in the BIOSCREEN model to calculate the 1st order decay coefficient. The recommended values for groundwater in the *Handbook of Environmental Degradation Rates*, range from 240 to 17280 hours or approximately 0.03 to 2 years. The handbook indicates that the range from approximately 2688 to 17280 hours (0.3 to 2 years) is considered to represent the anaerobic half-life for benzene in groundwater. Therefore, to provide the most conservative prediction in the BIOSCREEN modeling, the maximum recommended solute half-life value of approximately 17280 hours or 2 years was used.

6. *Removal or control of the source of contamination*. Source control has been completed by the former UST system being permanently closed between 1980 and 1987. A groundwater pump and treat system was operated at the site from approximately 1987 to 1992. There is no documentation in the LUST file regarding the volume of groundwater treated. Passive LPH skimmers were used in the wells with measurable LPH, and operated until 1997, when an active pneumatic skimming system was installed in four wells as part of the bio-venting system. The active skimming system operated until 2002. Passive skimming and/or manual LPH removal continued through the first quarter of 2017. The total volume of LPH recovered from 1980 through 1992 is not available in the LUST file. The reported LPH removal from 1995 through February 2017 is estimated to be 1,749 gallons.

7. *Requirements of A.R.S. §49-1005(D) and (E):* The results of the corrective action completed at the site assure protection of public health, welfare and the environment, to the extent practicable, the clean-up activities competed at this site allow for the maximum beneficial use of the site, while being reasonable, necessary and cost effective.

8. *Other information that is pertinent to the LUST case closure approval*: The facility and LUST files were reviewed for information regarding prior cleanup activities, prior site uses and operational history of the UST system prior to removal.

Groundwater data for B1

Date	Benzene AWQS is 5 µg/L	Depth to water (ft.)
May 1995-January 2007	<0.5	133.36
April 2007-October 2009	---	---
November 2009	**2,400**	136.83
July 2010	**1,200**	136.63
May 2011	**980**	136.18
December 2011	**240**	137.04
June 2012	**63.9**	137.38
January 2013	**192**	138.05
December 2013	**21**	137.1
March 2014	<2.0	136.71
June 2014	<2.0	136.9
July 2014	**150**	136.89

October 2014	**360**	137.03
January 2015	**77**	137.32
August 2015	**206**	136.77
November 2015	**2.08**	137.02
February 2016	**31.7**	137.54
May 2016	**207**	137.97
August 2016	**16.7**	138.20
December 2016	**164**	138.71
February 2017	**606**	138.14
May 2017	**249**	138.45
August 2017	**93.6**	139.12
December 2017	**118**	139.37
March 2018	**472**	139.62

Groundwater data for B13

Date	**Benzene AWQS is 5 µg/L**	**Depth to water (ft.)**
October 2014	**33**	137.94
January 2015	**150**	--
June 2015	**28**	136.95
August 2015	**279**	137.05
November 2015	**210**	137.22
February 2016	**94.6**	137.55
May 2016	**121**	137.91
August 2016	**175**	138.10
December 2016	**179**	138.72
February 2017	**71.3**	138.38
May 2017	**127**	138.51
August 2017	**71.8**	138.91
December 2017	**110**	139.11
March 2018	**119**	139.62

Groundwater data for AY-0

Date	**Benzene AWQS is 5 µg/L**	**Depth to water (ft.)**
December 1994-June 2003	---	various
November 2004	0.98	135.31
December 2004-March 2007	---	various
April 2007	**7.2**	137.46
June 2007-January 2015	---	various
June 2015	**180**	137.41
August 2015	**202**	137.64
November 2015	**30.1**	137.90

February 2016	---	---
May 2016	---	---
August 2016	**198**	139.73
December 2016	**38.8**	140.31
February 2017	**143**	139.79
May 2017	**62.4**	139.77
August 2017	**53.3**	140.55
December 2017	**48.1**	140.82
March 2018	**53.5**	140.85

Groundwater data for AY-4

Date	**Benzene AWQS is 5 µg/L**	**Depth to water (ft.)**
September 1988	2	---
November 1988	7	---
November 1990	0.4	---
November 1991	<0.3	---
July 1992	<0.39	---
November 1993-September 2006	<0.5	various
October 2007	**47**	137.67
October 2008	**79/72**	137.89
April 2009	**1,200**	137.14
July 2010	**1,800**	136.36
December 2011	**34**	136.83
June 2012	<1.0	137.15
June 2013	0.48	137.51
July 2014	2.60	136.73
June 2015	<1.0	136.67
August 2015	<1.0	136.71
November 2015	<1.00	136.95
February 2016	<1.00	137.31
May 2016	<1.00	138.17
August 2016	<1.00	137.83
December 2016	<1.00	138.39
February 2017	<1.00	138.04
May 2017	**13.4**	138.29
August 2017	3.08	138.60
December 2017	3.78	138.76
March 2018	**10.6**	138.72

Site specific information concerning this closure is available for review during normal business hours at the ADEQ Records Center http://www.azdeq.gov/function/assistance/records.html , 1110 W. Washington St., Suite 140, Phoenix, AZ 85007. ADEQ welcomes comments on the proposed LUST case closure.

Please call the Records Center at 602-771-4380 to schedule an appointment. A 30-day public comment period is in effect commencing **December 21, 2018 and ending January 21, 2019**. Comments may be submitted by mail or email. Written comments should be sent to:

Arizona Department of Environmental Quality
Waste Programs Division
Attn: Marcella Caldwell
1110 W. Washington Street
Phoenix, AZ 85007

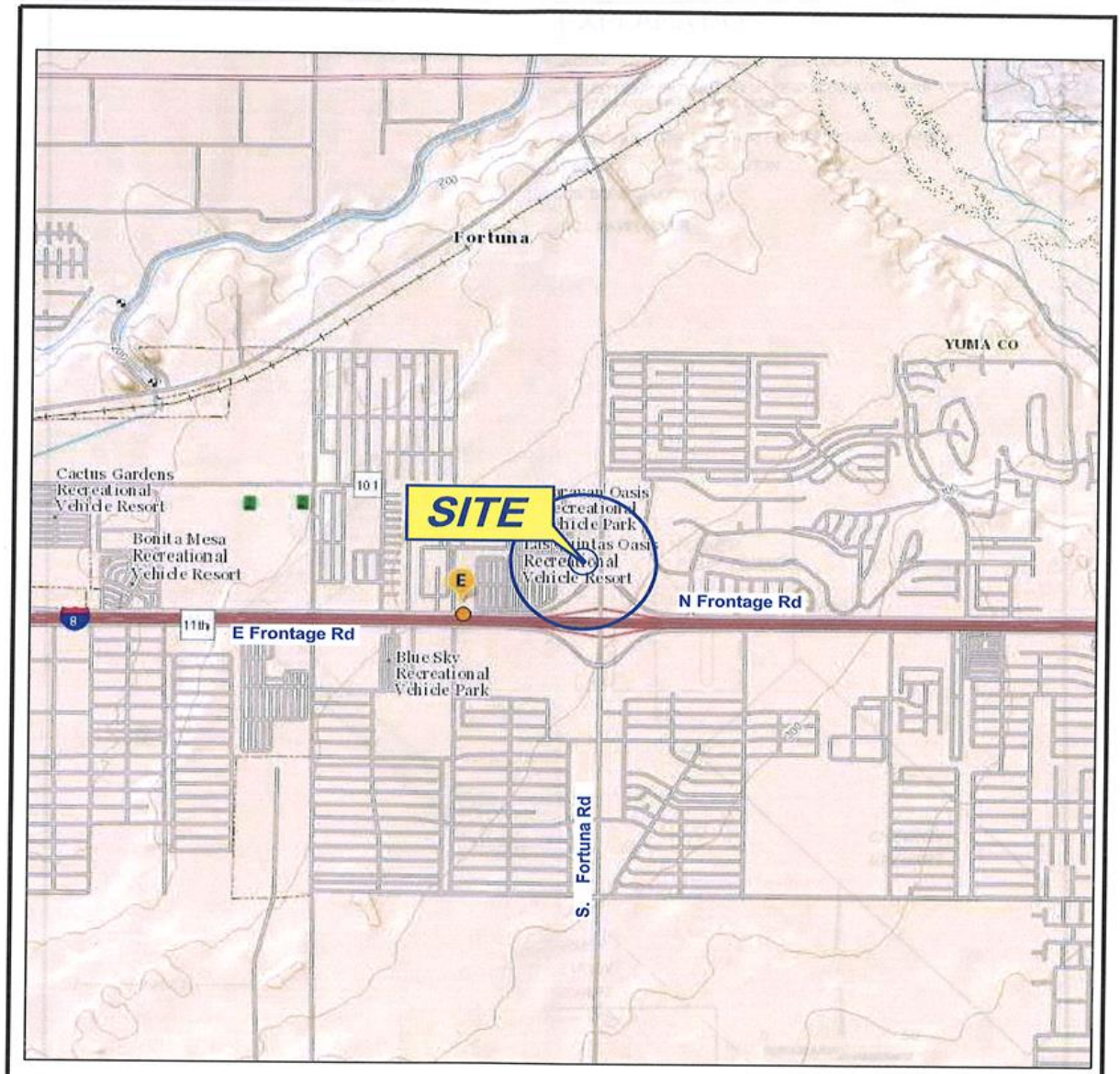
or electronically mailed to: mc13@azdeq.gov.

If sufficient public interest is demonstrated during the public comment period, ADEQ may announce and hold a public meeting. ADEQ will consider all submitted comments and reserves the right to respond to those comments following the public comment period. For more information on this notice, please contact the Case Manager, Marcella Caldwell at (602) 771-4464 or at mc13@azdeq.gov, or the Sr. Risk Assessor, Debi Goodwin at (602) 771-4453 or at dg1@azdeq.gov

Copies of the cited statutes and rules can be found at:
http://www.azleg.gov/ArizonaRevisedStatutes.asp?Title=49, and
http://www.azsos.gov/public_services/Title_18/18-12.htm

ADEQ will take reasonable measures to provide access to department services to individuals with limited ability to speak, write or understand English and/or to those with disabilities. Requests for language interpretation, ASL interpretation, CART captioning services or disability accommodations must be made at least 48 hours in advance by contacting Ian Bingham, Title VI Nondiscrimination Coordinator at 602-771-4322 or Bingham.Ian@azdeq.gov. Teleprinter services are available by calling 7-1-1 at least 48 hours in advance to make necessary arrangements.

ADEQ tomará las medidas razonables para proveer acceso a los servicios del departamento a personas con capacidad limitada para hablar, escribir o entender inglés y / o para personas con discapacidades. Las solicitudes de servicios de interpretación de idiomas, interpretación ASL, subtitulados de CART, o adaptaciones por discapacidad deben realizarse con al menos 48 horas de anticipación contactando a Ian Bingham, Coordinador de Anti-Discriminación del Título VI al 602-771-4322 o Bingham.Ian@azdeq.gov. Los servicios de teleimpresores están disponibles llamando al 7-1-1 con al menos 48 horas de anticipación para hacer los arreglos necesarios.



GENERAL NOTES:
BASE MAP FROM NATIOANLMAP.gov

SITE LOCATION

N

0 1,800'

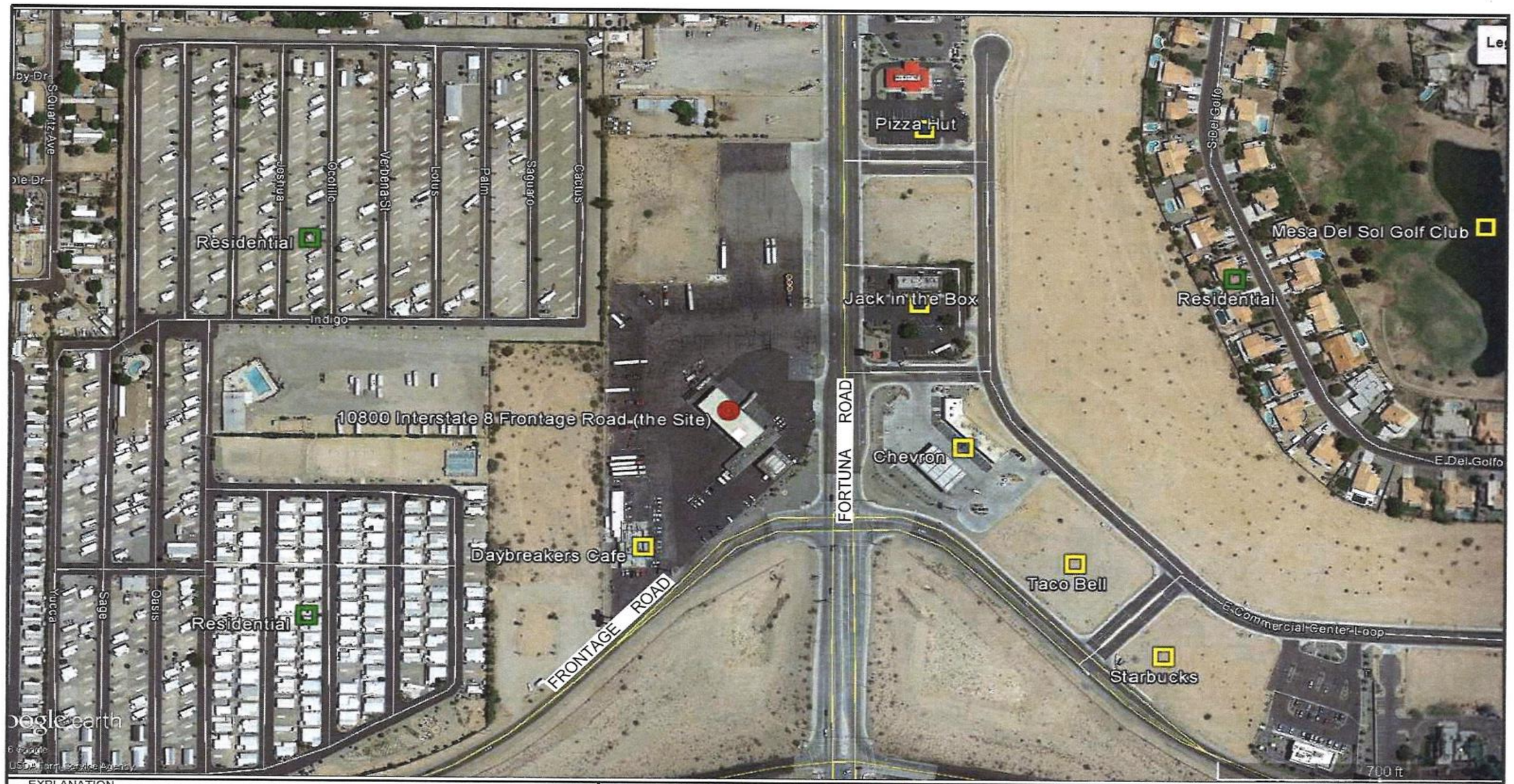
SCALE

FIGURE 1
SITE LOCATION MAP

FORMER ARCO FACILITY NO. 9929
10800 NORTH FRONTAGE ROAD
YUMA, ARIZONA

PROJECT NO. Tesoro9929	DRAWN BY K. MARTIN
FILE NO. 9929-Slm	PREPARED BY G. DEMETER
DATE 10 DEC 13 / REV. 0	REVIEWED BY

antea group



EXPLANATION

- NEARBY BUSINESS
- RESIDENTIAL

IMAGE REFERENCE: 2016 GOOGLE EARTH

N

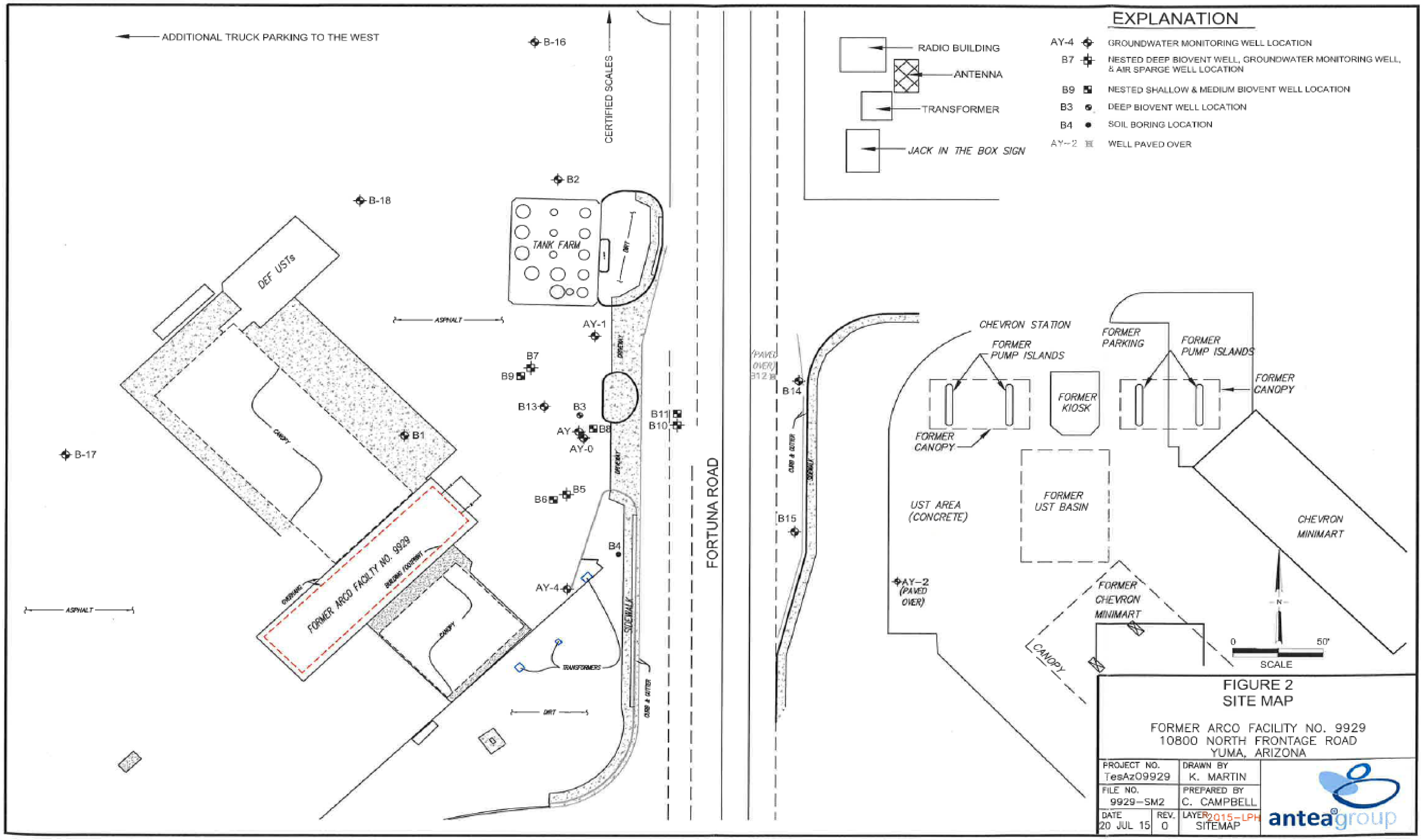
0 200'

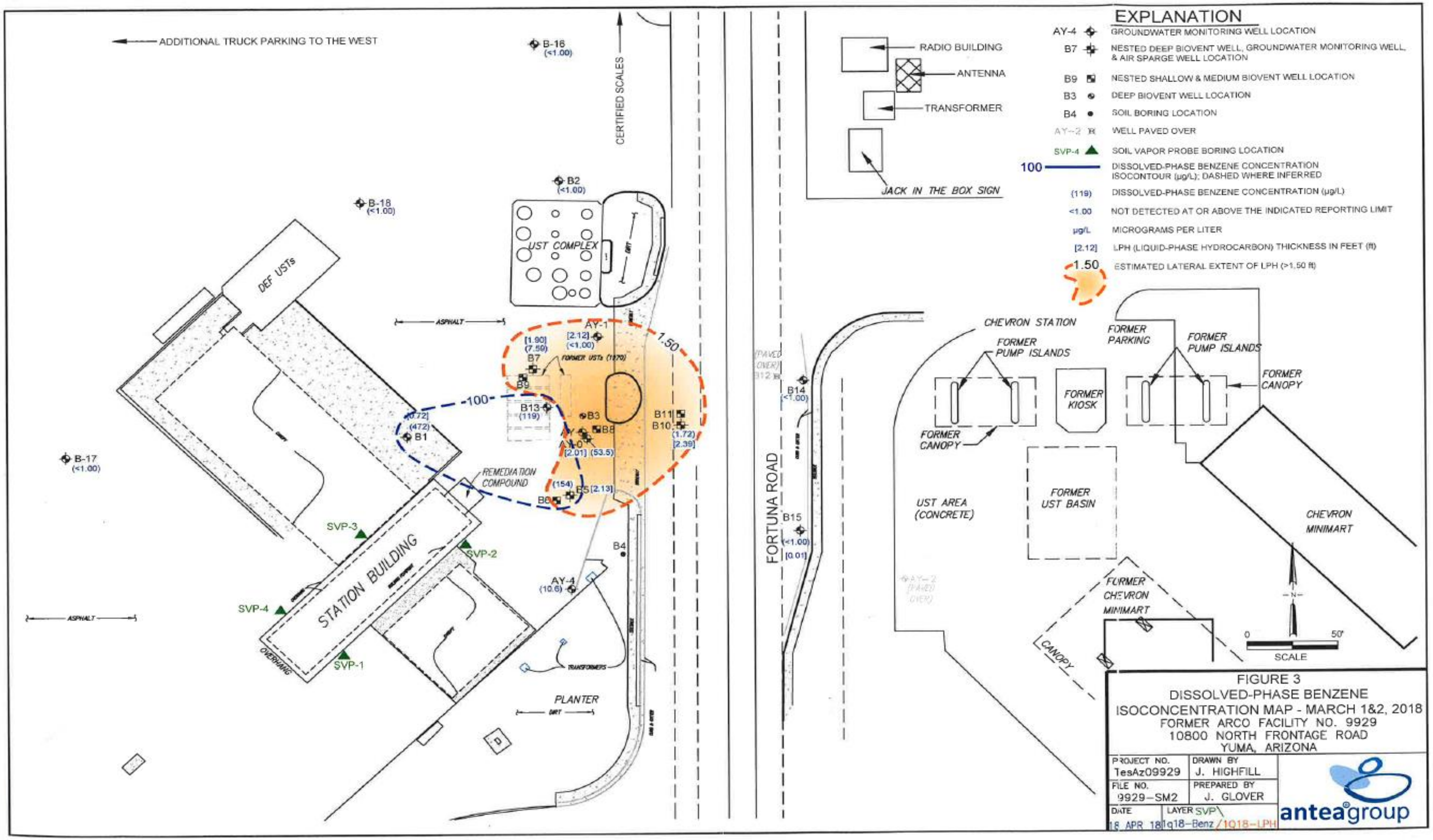
APPROX. SCALE

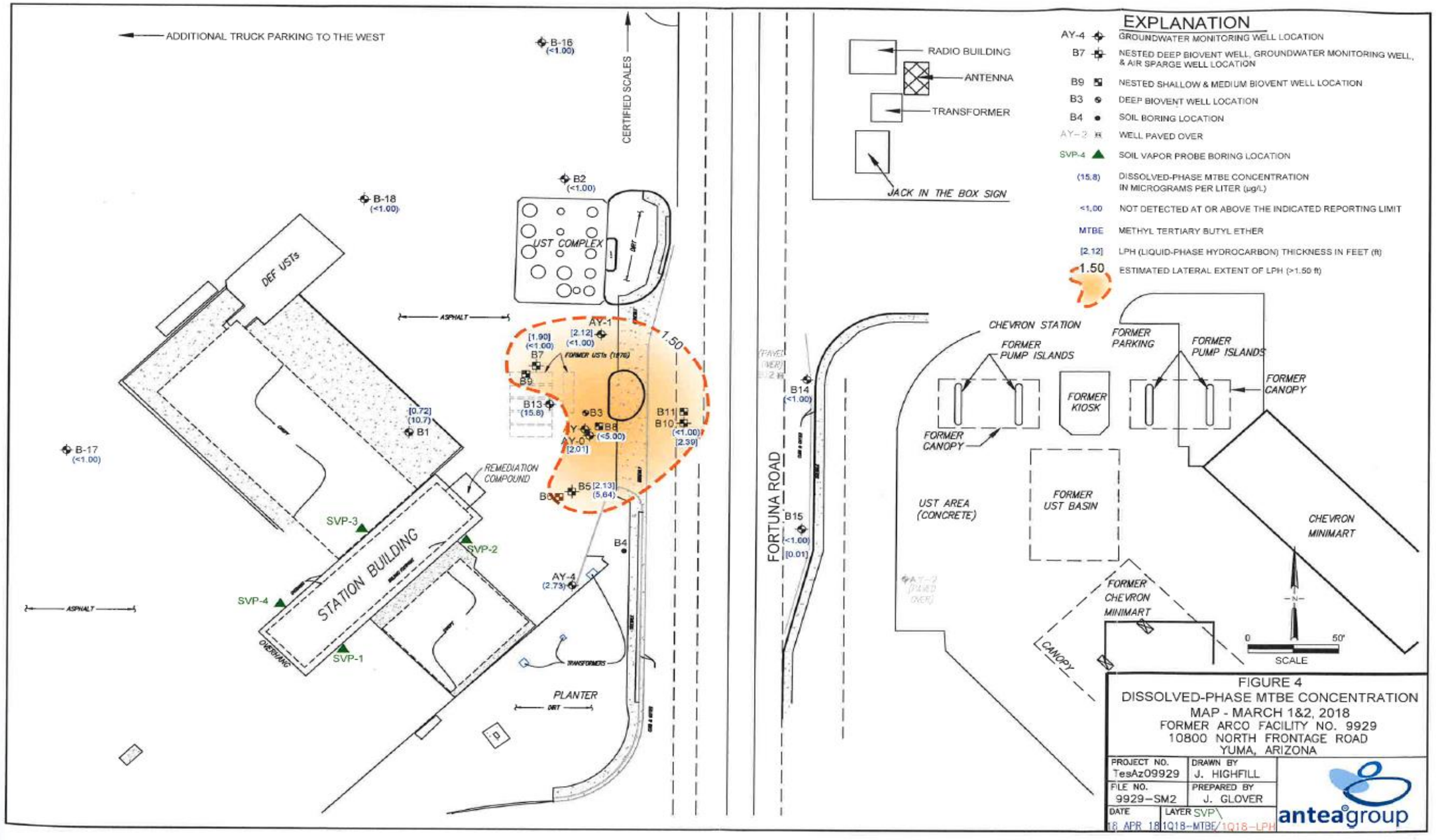
FIGURE 2A
SITE VICINITY MAP
FORMER ARCO FACILITY NO. 9929
10800 NORTH FRONTAGE ROAD
YUMA, ARIZONA

PROJECT NO. TesAz09929		DRAWN BY K. MARTIN	
FILE NO. 9929-svm		PREPARED BY C. CAMPBELL	
DATE 20 Jun 16	REV. 0	LAYER	

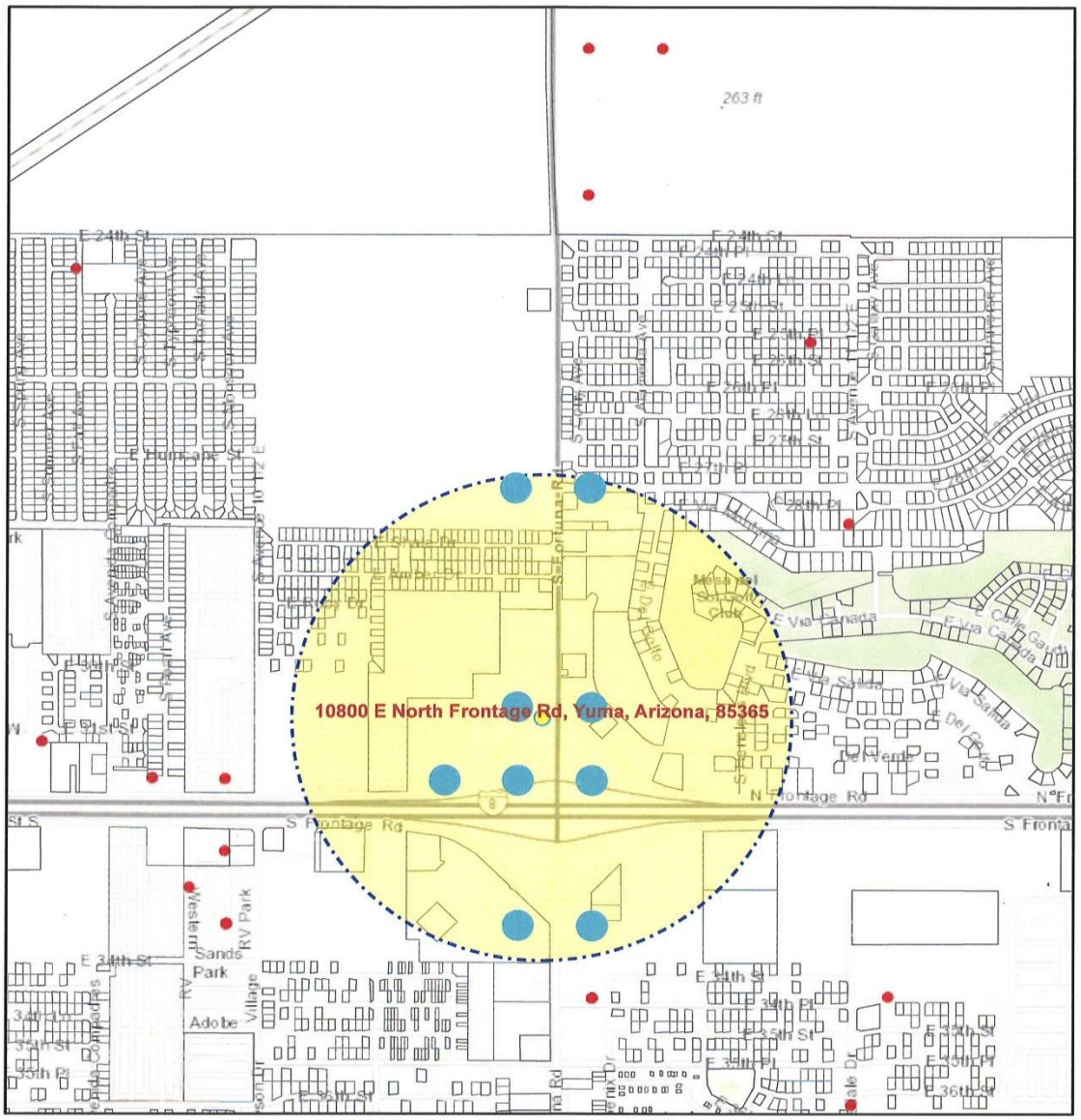
antea group


ADDITIONAL TRUCK PARKING TO THE WEST
B-16
CERTIFIED SCALES
B2
B-18
TANK FARM
DEF USTs
ASPHALT
AY-1
B7
B9
B13
B3
B1
AY
B8
AY-0
B-17
B11
B10
B6
B5
B4
CANOPY
FORMER ARCO FACILITY NO. 9929
BUILDING FOOTPRINT
AY-4
ASPHALT
TRANSFORMERS
SIDEWALK
CURB & GUTTER
DIRT
FORTUNA ROAD
(PAVED OVER) B12
B14
B15
CURB & GUTTER
RADIO BUILDING
ANTENNA
TRANSFORMER
JACK IN THE BOX SIGN
EXPLANATION
AY-4 GROUNDWATER MONITORING WELL LOCATION
B7 NESTED DEEP BIOVENT WELL, GROUNDWATER MONITORING WELL, & AIR SPARGE WELL LOCATION
B9 NESTED SHALLOW & MEDIUM BIOVENT WELL LOCATION
B3 DEEP BIOVENT WELL LOCATION
B4 SOIL BORING LOCATION
AY-2 WELL PAVED OVER
CHEVRON STATION
FORMER PUMP ISLANDS
FORMER PARKING
FORMER PUMP ISLANDS
FORMER CANOPY
FORMER KIOSK
FORMER CANOPY
UST AREA (CONCRETE)
FORMER UST BASIN
CHEVRON MINIMART
AY-2 (PAVED OVER)
FORMER CHEVRON MINIMART
CANOPY
N
0
50'
SCALE
FIGURE 2
SITE MAP
FORMER ARCO FACILITY NO. 9929
10800 NORTH FRONTAGE ROAD
YUMA, ARIZONA
PROJECT NO. TesAz09929
DRAWN BY K. MARTIN
FILE NO. 9929-SM2
PREPARED BY C. CAMPBELL
DATE 20 JUL 15
REV. 0
LAYER SITEMAP
R2015-LPH
anteagroup


ADDITIONAL TRUCK PARKING TO THE WEST
B-16 (<1.00)
CERTIFIED SCALES
B2 (<1.00)
B-18 (<1.00)
B-17 (<1.00)
DEF USTs
UST COMPLEX
ASPHALT
AY-1 [2.12] (<1.00)
[1.90] (7.59) B7
FORMER USTs (1970)
B9
1.50
-100-
B13 (119)
[0.72] (472) B1
B3
B8
AY-0 [2.01] (53.5)
B11
B10 (1.72) [2.39]
REMEDIATION COMPOUND
(154) B5 [2.13]
B6
SVP-3
SVP-2
SVP-4
SVP-1
STATION BUILDING
OVERHANG
B4
AY-4 (10.6)
TRANSFORMERS
PLANTER
DIRT
FORTUNA ROAD
(PAVED OVER) B12
B14 (<1.00)
B15 (<1.00) [0.01]
AY-2 (PAVED OVER)
RADIO BUILDING
ANTENNA
TRANSFORMER
JACK IN THE BOX SIGN
CHEVRON STATION
FORMER PUMP ISLANDS
FORMER PARKING
FORMER PUMP ISLANDS
FORMER CANOPY
FORMER KIOSK
FORMER CANOPY
UST AREA (CONCRETE)
FORMER UST BASIN
CHEVRON MINIMART
FORMER CHEVRON MINIMART
CANOPY
N
0 50'
SCALE
EXPLANATION
AY-4 GROUNDWATER MONITORING WELL LOCATION
B7 NESTED DEEP BIOVENT WELL, GROUNDWATER MONITORING WELL, & AIR SPARGE WELL LOCATION
B9 NESTED SHALLOW & MEDIUM BIOVENT WELL LOCATION
B3 DEEP BIOVENT WELL LOCATION
B4 SOIL BORING LOCATION
AY-2 WELL PAVED OVER
SVP-4 SOIL VAPOR PROBE BORING LOCATION
100 DISSOLVED-PHASE BENZENE CONCENTRATION ISOCONTOUR (µg/L); DASHED WHERE INFERRED
(119) DISSOLVED-PHASE BENZENE CONCENTRATION (µg/L)
<1.00 NOT DETECTED AT OR ABOVE THE INDICATED REPORTING LIMIT
µg/L MICROGRAMS PER LITER
[2.12] LPH (LIQUID-PHASE HYDROCARBON) THICKNESS IN FEET (ft)
1.50 ESTIMATED LATERAL EXTENT OF LPH (>1.50 ft)
FIGURE 3
DISSOLVED-PHASE BENZENE
ISOCONCENTRATION MAP - MARCH 1&2, 2018
FORMER ARCO FACILITY NO. 9929
10800 NORTH FRONTAGE ROAD
YUMA, ARIZONA
PROJECT NO. TesAz09929
DRAWN BY J. HIGHFILL
FILE NO. 9929-SM2
PREPARED BY J. GLOVER
DATE 18 APR 18
LAYER SVP\1q18-Benz/1Q18-LPH
anteagroup


ADDITIONAL TRUCK PARKING TO THE WEST
B-16 (<1.00)
CERTIFIED SCALES
B2 (<1.00)
B-18 (<1.00)
UST COMPLEX
DEF USTs
ASPHALT
AY-1 [2.12] (<1.00)
[1.90] (<1.00) B7
FORMER USTs (1976)
B9
B13 (15.8)
B3
B11
B10 (<1.00) [2.39]
AY-0 (<5.00) [2.01]
1.50
[0.72] (10.7) B1
B-17 (<1.00)
REMEDIATION COMPOUND
B5 [2.13] (5.64)
B6
SVP-3
SVP-2
B4
AY-4 (2.73)
SVP-4
STATION BUILDING
OVERHANG
SVP-1
TRANSFORMERS
PLANTER
DIRT
ASPHALT
FORTUNA ROAD
B14 (<1.00)
B15 (<1.00) [0.01]
RADIO BUILDING
ANTENNA
TRANSFORMER
JACK IN THE BOX SIGN
EXPLANATION
AY-4 GROUNDWATER MONITORING WELL LOCATION
B7 NESTED DEEP BIOVENT WELL, GROUNDWATER MONITORING WELL, & AIR SPARGE WELL LOCATION
B9 NESTED SHALLOW & MEDIUM BIOVENT WELL LOCATION
B3 DEEP BIOVENT WELL LOCATION
B4 SOIL BORING LOCATION
AY-2 WELL PAVED OVER
SVP-4 SOIL VAPOR PROBE BORING LOCATION
(15.8) DISSOLVED-PHASE MTBE CONCENTRATION IN MICROGRAMS PER LITER (µg/L)
<1.00 NOT DETECTED AT OR ABOVE THE INDICATED REPORTING LIMIT
MTBE METHYL TERTIARY BUTYL ETHER
[2.12] LPH (LIQUID-PHASE HYDROCARBON) THICKNESS IN FEET (ft)
1.50 ESTIMATED LATERAL EXTENT OF LPH (>1.50 ft)
CHEVRON STATION
FORMER PUMP ISLANDS
FORMER PARKING
FORMER PUMP ISLANDS
FORMER CANOPY
FORMER KIOSK
FORMER CANOPY
UST AREA (CONCRETE)
FORMER UST BASIN
CHEVRON MINIMART
FORMER CHEVRON MINIMART
CANOPY
AY-2 (PAVED OVER)
N
0
50'
SCALE
FIGURE 4
DISSOLVED-PHASE MTBE CONCENTRATION MAP - MARCH 1&2, 2018
FORMER ARCO FACILITY NO. 9929
10800 NORTH FRONTAGE ROAD
YUMA, ARIZONA
PROJECT NO. TesAz09929
DRAWN BY J. HIGHFILL
FILE NO. 9929-SM2
PREPARED BY J. GLOVER
DATE 18 APR 18
LAYER SVP\1Q18-MTBE/1Q18-LPH
anteagroup

ARCO No. 9929



October 22, 2018

1:18,056

0 0.13 0.25 0.5 mi

0 0.2 0.4 0.8 km

Arizona Department of Water Resources, Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, © OpenStreetMap contributors, and the GIS

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